



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

KIMURA et al

Serial No.: 09/854,608

Filed: May 15, 2000

For: LIGHT DIFFUSION SHEET

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) Examiner: Parker  
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) Group Art Unit: 2871  
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DECLARATION UNDER 37 CFR 1.132

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

I, Teruo OHNUMA, hereby declare:

1. I am a citizen of Japan residing at 4-11-14, Higashi-Jujo, Kita-ku, Tokyo, Japan;
2. I am one of the coinventors of the invention described and claimed in the captioned application and I am familiar with the claims as currently worded after amendment filed May 15, 2001 and with the Konno et al reference (U.S. Patent 5,607,764).
3. I conducted a comparative experiment from March 26, 2003 to March 28, 2003 to prove that the optical diffuser of Konno et al does not satisfy the distinctness of image and haze of claimed range and submit herewith the results of the comparative experiment as evidence that our invention is patentably distinguished from the Konno et al reference.
4. I further declare that all statements made herein of my own knowledge and belief are believed true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated this 10 day of April 2003

Teruo Ohnuma  
Teruo OHNUMA

## Experiment and Results

### 1. Comparative Experiment

Diffuser samples were produced by using the same coating mixture as that of EXAMPLE 1 of the Kono et al reference and applying the mixture onto polyethylene terephthalate supports processed in the same manner described in the Kono et al reference (column 3, lines 32~41) while changing an amount of the coating mixture.

Reference samples were produced by using a coating solution (a), which is the same as one used in Example 1 of the present invention, and applying the coating solution onto a polyethylene terephthalate film having a thickness of 100 $\mu$ m while changing an amount of the coating solution to obtain the reference samples having different thickness.

For each of diffuser samples and reference samples, the distinctness of image, haze and total light transmission were measured and the results are shown in Table 1 and Table 2. The relationship between these properties and the amount of the coating mixture of the diffuser samples are shown in Figure 1.

### 2. Results

As shown in Figure 1, the distinctness of image of not less than 25% and the haze of not less than 80% are satisfied in a very narrow range of the amount of the coating mixture in the diffuser samples. On the other hand, as shown in Table 2, most of the reference samples exhibited the distinctness of image of higher than 25% and the haze of higher than 80% in a wide range of the thickness (25 $\mu$ m to 39 $\mu$ m) except one sample having a thickness of 25 $\mu$ m.

### 3. Conclusion

It can be concluded from the results of the comparative experiment that the present invention is not obvious over the Kono et al reference since the Kono et al reference does not teach a light diffusion sheet which satisfies both the distinctness of image of higher than 25% and the haze of higher than 80%.

TABLE 1

Diffuser Sample					
	Thickness of Layer	Amount of Coating	Distinctness	Haze	Total Light Transmission
	( $\mu\text{m}$ )	( $\text{g}/\text{m}^2$ )	(%)	(%)	(%)
	23	8.5	43.6	69.36	81.66
	27	12.0	39.2	73.63	80.21
	27	12.5	37.7	76.18	79.73
	27	13.3	24.5	84.75	77.57
○	27	13.8	23.1	86.10	77.47
○	27	15.4	19.6	87.40	76.76
	27	15.8	19.2	87.87	76.29
	28	17.5	19.0	88.68	76.07

The Kono et al reference

good

10~17

Example 3

14.76

TABLE 2

Reference Sample					
	Thickness of Layer	Amount of Coating	Distinctness	Haze	Total Light Transmission
	( $\mu\text{m}$ )	( $\text{g}/\text{m}^2$ )	(%)	(%)	(%)
	25		61.7	67.20	80.73
	27		49.1	80.88	76.01
	30		36.7	84.94	73.99
◎	32		28.5	86.36	73.23
	35		27.2	86.89	74.19
	37		27.4	87.16	74.54
	39		27.2	87.43	74.61

The present invention

good

25~50

25.0 or more 80.0 or more

70.0 or more

best

30~40

27.5 or more 85.0 or more

75.0 or more

Exam.1

33

29.5

87.4

75.8

